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EXAMINER

SWERDLOW, DANIEL

ART UNIT PAPER NUMBER

2644

DATE MAILED: 07/17/2003

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/579,719

Applicant(s)

WILDFEUER, HERBERT M

Examiner

Daniel Swerdlow

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 6, 8-10, 12, 14-19, 21, 23, 25-28, 30, 32-34, 36, 37, 40, 42-44, 46 and 48 is/are rejected.
- 7) ☒ Claim(s) 3, 5, 7, 11, 13, 20, 22, 24, 29, 31, 35, 38, 39, 41, 45 and 47 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The informal drawings filed in this application are acceptable for examination purposes. When the application is allowed, applicant will be required to submit new formal drawings.

Minor Informalities

2. Due to an apparent typographical error, the claim beginning on line 22 of page 11 was not consecutively numbered. Examiner has renumbered this claim as Claim 31. If this is acceptable to the applicant, no further action related to this informality need be taken.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 6, 8, 9, 12, 14, 15, 17, 18, 21, 23, 25 through 27, 30, 32 through 34, 36, 37, 40, 42, 43, 46 and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by Interrante et al. (US Patent 6,011,783).

5. Claim 1 claims a method for testing an echo canceller. Interrante discloses a method for measuring the performance of (i.e., testing) an echo canceller (Fig. 1, reference 11; column 1, lines 55-58). Claim 1 further claims the method comprises generating an excitation signal

Art Unit: 2644

including a preamble portion and a test portion. Interrante discloses a microprocessor that generates a control word that corresponds to the preamble portion claimed and test data that correspond to the test portion claimed (column 3, lines 9-19). Claim 1 further claims the method comprises encoding the preamble portion with configuration information relating to the echo canceller. Interrante discloses the control word that corresponds to the preamble portion claimed containing (i.e., being encoded with) a timeslot during which the echo canceller will be placed in the performance measurement mode (i.e., configuration) (column 3, lines 16-19, 48-52, 63-66). Claim 1 further claims the method comprises transmitting the excitation signal to the echo canceller. Interrante discloses the control word and test data being received from (i.e., transmitted by) a microprocessor (column 3, lines 9-11, 13-15). Therefore, Interrante anticipates all elements of Claim 1.

6. Claim 2 claims the method of Claim 1 including taking a performance measurement responsive to the preamble portion. As stated above apropos of claim 1, Interrante anticipates all elements of that claim. In addition, Interrante discloses performance measurement being done during a timeslot specified in the control word that corresponds to the preamble claimed (column 3, lines 16-19, 48-52, 63-66). Therefore, Interrante anticipates all elements of Claim 2.

7. Claim 6 claims the method of Claim 1 including encoding a test identifier in the preamble portion. As stated above apropos of Claim 1, Interrante anticipates all elements of that claim. In addition, Interrante discloses encoding a number identifying the timeslot to be tested (column 3, lines 31-33). Therefore, Interrante anticipates all elements of Claim 6.

8. Claim 8 claims the method of Claim 1 including encoding the preamble portion in such a way as to be capable of being differentiated from the test portion. As stated above apropos of

Claim 1, Interrante anticipates all elements of that claim. In addition, Interrante discloses storage of the control word that corresponds to the preamble portion claimed in a register (Fig. 1, reference 21; column 3, lines 9-11) and storage of the test data that corresponds to the test portion claimed in a shift register (Fig. 1, reference 24; column 3, lines 13-15). As such, the portions are inherently differentiable. Therefore, Interrante anticipates all elements of Claim 8.

9. Claims 9, 17, 23, 26 and 32 are essentially similar to Claim 1 and are rejected for the reasons stated above apropos of Claim 1.

10. Claims 12, 21, 30 and 36 are essentially similar to Claim 6 and are rejected for the reasons stated above apropos of Claim 6.

11. Claims 14, 25 and 33 are essentially similar to Claim 8 and are rejected for the reasons stated above apropos of Claim 8.

12. Claim 15 claims the method of Claim 9 including controlling the echo canceller during testing to within a single sample time of the excitation signal. As stated above apropos of Claim 9, Interrante anticipates all elements of that claim. In addition, Interrante discloses control of the echo canceller for a specific timeslot (i.e., sample time) (column 3, lines 11-13). Therefore, Interrante anticipates all elements of Claim 15.

13. Claim 18 claims the system of Claim 17 including tail circuit emulating means for generating an echo back signal responsive to the test portion of the excitation signal. As stated above apropos of claim 17, Interrante anticipates all elements of that claim. In addition, Interrante discloses an echo path simulator (Fig. 1, reference 30; column 2, lines 55-61) that corresponds to the tail circuit emulating means claimed and simulates an echo path of the communications network (i.e., generates an echo back signal) (column 3, lines 24-28) in

Art Unit: 2644

response to test data (column 3, lines 38-41) that corresponds to the test portion claimed. Claim 18 further claims the system includes recording means for recording any received echo signal allowed to pass through the echo canceller. Interrante discloses a test data extraction unit (Fig. 1, reference 40; column 2, lines 62-67) that corresponds to the recording means claimed and stores (i.e., records) echo-cancelled test data (i.e., any received echo signal allowed to pass through the echo canceller) (column 4, lines 1-5). Therefore, Interrante anticipates all elements of Claim 18.

14. Claim 27 is essentially similar to Claim 18 and is rejected for the reasons stated above apropos of Claim 18.

15. Claim 34 claims the echo canceller of Claim 32 wherein the decoder extracts control information from the preamble portion. As stated above apropos of Claim 32, Interrante anticipates all elements of that claim. In addition, Interrante discloses control logic that corresponds to the decoder claimed utilizing the control word that corresponds to the preamble portion to determine the time slot for testing (i.e., control information) (column 3, lines 9-13). Claim 34 further claims the controller controls the echo canceller responsive to the control information. Interrante discloses injecting test data into (i.e., controlling) the echo canceller (column 3, lines 13-15) in response to the time slot information that corresponds to the control information claimed. Therefore, Interrante anticipates all elements of Claim 34.

16. Claims 37 and 43 claim a computer readable medium containing instructions that when executed are essentially similar to the method of Claim 1. As stated above apropos of Claim 1, Interrante anticipates all elements of that claim. In addition, Interrante discloses the method being implemented by a microprocessor (column 3, lines 9-19) that inherently executes

Art Unit: 2644

instructions on a computer readable medium. Therefore, Interrante anticipates all elements of Claims 37 and 43.

17. Claim 40 claims the medium of Claim 37 including encoding information identifying a type of test in the preamble portion. As stated above apropos of claim 37, Interrante anticipates all elements of that claim. In addition, Interrante discloses encoding a number identifying the timeslot to be tested (column 3, lines 31-33). Therefore, Interrante anticipates all elements of Claim 40.

18. Claim 42 claims the medium of Claim 37 including encoding the preamble portion in such a way that it is distinguishable from the test portion. As stated above apropos of claim 37, Interrante anticipates all elements of that claim. In addition, Interrante discloses storage of the control word that corresponds to the preamble portion claimed in a register (Fig. 1, reference 21; column 3, lines 9-11) and storage of the test data that corresponds to the test portion claimed in a shift register (Fig. 1, reference 24; column 3, lines 13-15). As such, the portions are inherently distinguishable. Therefore, Interrante anticipates all elements of Claim 42.

19. Claim 46 is essentially similar to Claim 40 and is rejected for the reasons stated above apropos of Claim 40.

20. Claim 48 is essentially similar to Claim 42 and is rejected for the reasons stated above apropos of Claim 42.

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2644

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claims 4, 10 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Interrante in view of Tol et al. (US Patent 4,918,685).

23. Claim 4 claims the method of Claim 1 including instructions in the preamble portion that when executed by the echo canceller result in inhibiting adaptation and clearing a register in the echo canceller. As stated above apropos of Claim 1, Interrante anticipates all elements of that claim. Further, as stated above apropos of Claim 1, Interrante discloses a control word that corresponds to the preamble portion claimed and causes test data to be delivered to the echo canceller. Therefore, Interrante anticipates all elements of Claim 4 with the exception of the test data resulting in inhibiting adaptation and clearing a register in the echo canceller. Tol discloses echo canceller testing by applying a random data sequence that results in the echo canceller coefficients being adjusted to zero (i.e., inhibiting adaptation and clearing a register) (column 2, lines 23-37). It would have been obvious to one skilled in the art at the time of the invention to apply the random test signal taught by Tol to the method taught by Interrante for the purpose of determining if the echo canceller is functioning in the proper manner.

24. Claim 10 is essentially similar to Claim 4 and is rejected for the reasons stated above apropos of Claim 4.

25. Claim 44 claims the medium of Claim 43 including inhibiting adaptation and clearing a register in the echo canceller. As stated above apropos of Claim 43, Interrante anticipates all elements of that claim. Further, as stated above apropos of Claim 1, Interrante discloses a control word that corresponds to the preamble portion claimed and causes test data to be

Art Unit: 2644

delivered to the echo canceller. Therefore, Interrante anticipates all elements of Claim 44 with the exception of the test data resulting in inhibiting adaptation and clearing a register in the echo canceller. Tol discloses echo canceller testing by applying a random data sequence that results in the echo canceller coefficients being adjusted to zero (i.e., inhibiting adaptation and clearing a register) (column 2, lines 23-37). It would have been obvious to one skilled in the art at the time of the invention to apply the random test signal taught by Tol to the method taught by Interrante for the purpose of determining if the echo canceller is functioning in the proper manner.

26. Claims 16, 19 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Interrante.

27. Claim 16 claims the method of Claim 15 including controlling the echo canceller during testing to within 125 microseconds. As stated above apropos of Claim 15, Interrante anticipates all elements of that claim. Therefore, Interrante is shown to anticipate all elements of Claim 16 with the exception of controlling the echo canceller during testing to within 125 milliseconds. Examiner takes Official Notice of the fact that a time slot on a DS1 signal has a duration of $1/(8000 \times 24)$ seconds or 5.2 microseconds. It would have been obvious to one skilled in the art at the time of the invention to control the echo canceller disclosed by Interrante to within 5.2 microseconds for the purpose of selecting a timeslot within a DS1 signal.

28. Claim 19 claims the system of Claim 17 wherein the preamble portion sets timing associated with performance tests defined in ITU-T G.165 and G.168 standards. As stated above apropos of Claim 17, Interrante anticipates all elements of that claim. In addition, Interrante discloses encoding test timing instruction in the control word that corresponds to the preamble

Art Unit: 2644

portion claimed. Therefore, Interrante is shown to anticipate all elements of Claim 19 with the exception of using performance tests defined in ITU-T G.165 and G.168 standards. It would have been obvious to one skilled in the art at the time of the invention to apply the use of performance tests defined in ITU-T G.165 and G.168 standards to the echo canceller disclosed by Interrante for the purpose of conforming to established standards.

29. Claim 28 is essentially similar to Claim 19 and is rejected for the reasons stated above apropos of Claim 19.

Allowable Subject Matter

30. Claims 3, 5, 7, 11, 13, 20, 22, 24, 29, 31, 35, 38, 39, 41, 45 and 47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

31. The following is a statement of reasons for the indication of allowable subject matter:

32. Claim 3 claims the method of Claim 2, including measuring the combined loss a predetermined time before receiving the test portion. As stated above apropos of Claim 2, Interrante anticipates all elements of that claim. Therefore, Interrante anticipates all elements of Claim 3 with the exception of measuring the combined loss a predetermined time before receiving the test portion. While Interrante teaches toward measuring combined loss during testing by disclosing measuring output power from the echo canceller as an indication of performance (column 4, lines 9-15), Interrante does not teach measuring the combined loss a predetermined time before receiving the test portion. As such, the prior art fails to anticipate or

make obvious measuring the combined loss a predetermined time before receiving the test portion. Therefore, Claim 3 is allowable matter.

33. Claims 38 and 39 are allowable matter for reasons stated above apropos of Claim 3.

34. Claim 5 claims the method of Claim 1, including encoding instructions in the preamble portion to disable a processor in the echo canceller. As stated above apropos of Claim 1, Interrante anticipates all elements of that claim. Therefore, Interrante anticipates all elements of Claim 5 with the exception of encoding instructions in the preamble portion to disable a processor in the echo canceller. While Interrante discloses encoding test timing instructions in the control word that corresponds to the preamble portion claimed, Interrante does not teach encoding instructions in the preamble portion to disable a processor in the echo canceller. As such, the prior art fails to anticipate or make obvious encoding instructions in the preamble portion to disable a processor in the echo canceller. Therefore, Claim 5 is allowable matter.

35. Claims 11, 24 and 45 are allowable matter for reasons stated above apropos of Claim 5.

36. Claim 7 claims the method of Claim 1, including encoding a test signal identifier in the preamble portion. As stated above apropos of Claim 1, Interrante anticipates all elements of that claim. Therefore, Interrante anticipates all elements of Claim 7 with the exception of encoding a test signal identifier in the preamble portion. While Interrante discloses encoding test timing instructions in the control word that corresponds to the preamble portion claimed, Interrante does not teach a test signal identifier in the preamble portion. As such, the prior art fails to anticipate or make obvious encoding a test signal identifier in the preamble portion. Therefore, Claim 7 is allowable matter.

37. Claims 13, 20, 29, 35, 41 and 47 are allowable matter for reasons stated above apropos of Claim 7.

38. Claim 22 claims the system of Claim 17 wherein the preamble portion is a correlated PCM sequence capable of being differentiated from the test portion of the excitation signal. As stated above apropos of Claim 17, Interrante anticipates all elements of that claim. In addition, as stated above apropos of Claim 8, the control word disclosed by Interrante that corresponds to the preamble claimed is distinguishable from the test data that corresponds to the test portion claimed. Therefore, Interrante anticipates all elements of Claim 22 with the exception of the preamble portion being a correlated PCM sequence. As such, the prior art fails to anticipate or make obvious the preamble portion being a correlated PCM sequence. Therefore, Claim 22 is allowable matter.

39. Claim 31 is allowable matter for reasons stated above apropos of Claim 22.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Swerdlow whose telephone number is 703-305-4088. The examiner can normally be reached on Monday through Friday between 8:00 AM and 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forrester Isen can be reached on 703-305-4386. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Application/Control Number: 09/579,719


Page 12

Art Unit: 2644

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

ds

July 1, 2003


FORESTER W. ISEN
SUPERVISORY PATENT EXAMINER
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